AMSAT News Service Weekly Bulletins
Issue: ANS-189
Date: 2018-07-08
Sources: amsat-ans-2018-ans-189-weekly-hyperkitty-ac34961e2b.txt

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AMSAT NEWS SERVICE
ANS-189

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

In this edition:

* AMSAT Symposium Call For Papers - First Call
* International Balloon Satellite Launch Challenge JULY 2018
* 145.825 MHz APRS Cubesats Enroute to ISS for August Deployment
* China Microsatellite Symposium and International CubeSat and Mission Contest
* "Moon Day" Volunteers Requested
* University of Manitoba Wins the 4th CSDC!
* AMSAT Field Day submissions are due Monday, July 9
* ISS SSTV Transmissions Continue
* ARISS News
* Satellite Shorts From All Over

SB SAT @ AMSAT $ANS-189.01
ANS-189 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 189.01
>From AMSAT HQ KENSINGTON, MD.
July 8, 2018
To All RADIO AMATEURS
BID: $ANS-189.01

AMSAT Symposium Call For Papers - First Call

This is the first call for papers for the 2018 AMSAT-NA Annual Meeting and Space Symposium to be held on the weekend of November 2 - 4 at the US Space and Rocket Center in Huntsville, Alabama. Proposals for papers, symposium presentations, and poster presentations are invited on any topic of interest to the amateur satellite community. We request a tentative title of your presentation as soon as possible. The final copy must be submitted by October 15th for inclusion in the printed proceedings. Abstracts and papers should be sent to Dan Schultz at n8fgv(at)amsat.org

[ANS thanks Dan N8FGV for the above information]

International Balloon Satellite Launch Challenge JULY 2018

The 1st FREE OF COST International Balloon 'Satellite' Launch CHALLENGE is open across the Globe for participants below 21 years of age.

Leveraging the power of technology, the State of Rajasthan in India has become the "Digitalization Hub of India". In the upcoming three-day technology carnival by the Government of Rajasthan- "Rajasthan Digifest 2018", held at Jaipur (known as the Pink city of the world) there will be a plethora of opportunities for everyone. From insightful workshops to varied exciting events, the fest would have a lot to offer.

Taking a step further, Government of Rajasthan in collaboration with Space Kidz India, is organizing an "International Balloon Challenge" on the 25th & 26th July 2018. This challenge has been initiated to mark a tribute towards our former President and reputed Scientist Dr. APJ Abdul Kalam.

Set with the motto- 'Dream. Imagine. Believe", it is an open competition for everyone aged below 21 years. The participant will have the opportunity to fly their payload 'near space' in a balloon FREE OF COST.

Following are some notable points in respect to the challenge:

- The payload must fit inside a 1U Cube3 and the weight should be 500 grams including the battery.
- No hazardous chemicals are allowed.
- Biological experiments containing living micro-organisms shall not be allowed.
- Only Original Ideas will be entertained.
- Any findings of plagiarisms can get the participant eliminated and permanently banned from participating in the future.
- If approved by Space Kids India you can also come directly to the venue and fly your payload.
- Accommodation and food facility for teams coming directly will be provided for two days.

Payload should reach our Chennai Office (Add. given below) on or before the 18th of July 2018.
Space Kidz India,
No.1-B, Nutech Narayana Apartments,
48, Thirumalai Pillai Road,
T.Nagar, Chennai 600 017, India

Space Kidz India and Government of Rajasthan invites students for this exciting and adventurous 'International Balloon Challenge' to be held on 25th & 26th July 2018. The competition not only looks inspiring & challenging, but will help the participants to meet like-minded people from different nook and corner of the world uniting together with a strong competitive edge. It's time to help our younger generation to showcase their skills and let their dreams fly high!

Our Contacts for further clarification:

Mr. Rifath	+919518535615	shaarookrsr(a)live.com
Mr. Vijay	+917708574647	vijaypp01(a)gmail.com
Mr. Priyadharshan	+918220333449	prabhupriyadharshan(a)gmail.com
Mr. Tanishq	+919940515800	forutanishq(a)gmail.com
Mr. Yagna	+919912752744	yagnasai7(a)gmail.com

Dr. Srimathy +914448535376 spacekidzindia(a)gmail.com

[ANS thanks SpaceKidz India Team for the above information]

145.825 MHz APRS Cubesats Enroute to ISS for August Deployment

The June 29, 2018 SpaceX Falcon 9 launch of the Dragon cargo capsule included cubesats of the BIRDS-2 satellite constellation. All cubesats in the BIRDS-2 constellation MAYA-1, BHUTAN-1 and UiTMSAT-1 have identical designs and utilize the same radio frequencies. While independently made, the operation and control of the three cubesats will be shared by the three teams after they are released from the ISS early in August. They will be operational for six months.

"The three will form a constellation, orbiting the earth from different places. This will provide the countries more opportunities to make measurements and run experiments, than just with using one cubesat," explained Joel Joseph Marciano Jr., manager of the PHL-Microsat program in the Philippines.

The primary mission of BIRDS-2 CubeSat constellation is to provide digital message relay service to the amateur radio community by means of an APRS digipeater onboard. The APRS digipeater onboard BIRDS-2 CubeSats will use 145.825 MHz for both receive and transmit which isa standard configurations used by other satellites such as ARISS and LAPAN-A2.

Another mission of the BIRDS-2 CubeSat constellation is to demonstrate a store-and-forward (S&F) system. In this mission, their goal is to investigate technical challenges through experiments on appropriate data format, multiple access scheme, file-handling protocol while complying with limited operational time and power constraints.

The BIRDS-2 CubeSat S&F system will collect data from remote ground sensors, store them onboard and download them to the different BIRDS-2 ground stations network.

Additional experiments will use the BIRDS-2 CubeSat constellation to enhance research and experiment in the fields of single latch-up event detection, magnetic field measurements using a COTS anisotropic magnetometer, and flight testing of a COTS GPS chip which can be used for future CubeSat missions if proven effective. Students will also explore a passive attitude stabilization mechanism consisting of magnets and hysteresis dampers for proper orientation of camera on a CubeSat. All measurements and image data will be shared with the public on BIRDS-2 project website.

Moveover, BIRDS-2 CubeSat constellation will expand amateur radio communication experiment on the operation of CubeSat constellation via a network of UHF/VHF amateur radio ground stations (started in the BIRDS-1 CubeSat constellation project). BIRDS-2 hopes to promote awareness of amateur radio communication and amateur satellites among the general public and students, especially in the participating nations of BIRDS-2 Project: Bhutan, Malaysia, Philippines, and Japan.

The IARU has coordinated 437.375 MHz CW beacon for a downlink and 145.825 MHz for the APRS experiment.

Philippine news coverage of MAYA-1 can be accessed at:
https://tinyurl.com/ANS189-MAYA-1
http://tinyurl.com/ANS-BIRDS2-cubesats
Visit the BIRDS-2 website at: http://birds2.birds-project.com/

[ANS thanks the BIRDS-2 Project, Kyushu Institute of Technology and
the IARU for the above information]

China Microsatellite Symposium and International CubeSat and Mission Contest

The China Microsatellite Symposium(CMS2018), (www.microsatsymp.com) will be held at Northwestern Polytechnical University, Xi'an China on 18th – 20th November 2018. The symposium includes keynote presentations and several sessions which will focus on the design experience, scientific missions, launch opportunities and all new technologies about microsatellites.

International CubeSat and Mission Contest will be held on 20th November 2018, after which a free launch opportunity of 3U CubeSat or 1U payload capacity (provided by Expace Technology Co., Ltd.) will be awarded to the winner of the first prize. Participants can get information and submit the works through the official website of our contest: www.cubesatcontest.org.

The submission deadlines for the abstract of CMS2018 and work of CubeSat contest are both August 31, 2018. The papers accepted will be indexed by China National Knowledge Infrastructure (CNKI) and the proceedings of the symposium will be submitted to IEEE Xplore, some of the excellent papers will be recommended for publication in the AEROSPACE CHINA. You could submit abstract and get information on the website www.microsatsymp.com

Along with the symposium, there will also be a related exhibition, during which you can find the updated progress of CubeSat, launchers and other related technology. For exhibitors, you could also get information about booth on the website.

The event is supported by China National Space Administration, International Astronautical Federation, Chinese Society of Astronautics and Chinese Institute of Command and Control.

Please forward this information to your colleagues and anyone that may be interested in this symposium.

You could also find the brochures in the attachment.

On behalf of the organizing committee of the China Microsatellite Symposium, we sincerely invite you to attend the symposium.

If you have any questions, please contact us!
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[ANS thanks Yuxiao Zhou (via cubesat.org) for the above information]

"Moon Day" Volunteers Requested

Tom Schuessler, N5HYP, is looking to recruit additional volunteers from the AMSAT community in North Texas, Central Texas or elsewhere, to help promote "Amateur Radio in Space" to a large public STEM event. "Moon Day" at the Frontiers of Flight Museum at Love Field in Dallas Texas on July 21, 2018 is the largest space themed STEM event in Texas. Last year saw 1500 people attend the 6 hour event. https://www.flightmuseum.com/moon-day/

Again this year, Tom Schuessler will be heading an exhibit and satellite demos for AMSAT. They will have a table inside the Museum, (Alongside the Dallas Amateur Radio Club Table), and a demonstration area outside. I will be setting up the outside activities and hope to work as many satellite passes as possible during the 10A-4P run of the show.

I'm looking for AMSAT people to both help with the inside table and also with the outside demonstrations. Joe Spier has promised me that he will send me the FOX "Engineering Model" but I am looking for additional demonstration aids to illustrate satellite orbits and other aspects of space communications like various types of antennas.

Being a STEM event, there will be many young people in attendance, (General public as well as Boy and Girl Scouts), and they get a chance to earn a STEM patch by answering questions from exhibitors like US.

We really need people and content for Moon Day so please consider spending Saturday, July 21 with us. Contact Tom Schuessler for more information. N5hyp (at) arrl.net

Tom also notes that next year, 2019, is the 50th anniversary of the Apollo 11 moon landing. The Moon Day event is planning a big splash. Looking at moon phase predictions for next year indicates that conditions would be favorable for a portable EME station as part of the mix. We will be looking for volunteers to assist this lofty goal.

Keep that in the back of your mind and I will bring it up next year.

[ANS thanks Tom N5HYP for the above information]

University of Manitoba Wins the 4th CSDC!

Congratulations to the University of Manitoba team, which earned First Place in this fourth offering of the Canadian Satellite Design Challenge! The CSDC launch simulation testing took place at the Canadian Space Agency's David Florida Laboratory (DFL) in Ottawa this past week, concluding yesterday. In all, a total of nine teams had the opportunity to fully test all three axes of their cubesats - two more than previously achieved.

As the competition drew to a close, the judges (and several of the DFL employees) were impressed by the level of design maturity and understanding, preparedness, and professionalism of the UofM team throughout the test campaign. This is the first CSDC win for the UofM, which has been a strong and enthusiastic participant in every CSDC since its inception. Not everything went perfectly, however: an accelerometer - a sensor which is attached to record the accelerations at a particular location - fell off during the vibration test, and may have shorted or damaged a circuit board that was underneath it.

The judges' deliberations for second and third place were far more difficult, with five teams being considered. This is a testament to the high level of spacecraft engineering capability which has developed at Canadian universities over the course of these past four competitions - especially considering that, in the first CSDC, only three teams were able to complete their cubesats in time for testing. Second place honours were given to the University of Victoria, and Concordia University was third.

The Educational Outreach Award was also presented, to the University of Alberta. Their team developed several modules of age-specific educational materials for the presentations which they gave to elementary and secondary schools. Honourable mentions went to: Simon Fraser University (participating for their first time in the CSDC) for their efforts which reached an estimated 3,500 people over the course of this offering; and, the University of Manitoba, whose educational outreach efforts have been admirable since the inception of the CSDC (and whose Educational Outreach efforts in the first CSDC prompted the creation of the award).

The CSDC Management Society (CSCDMS), the not-for-profit organisation which organises the CSDC, would like to again thank the Canadian Space Agency's David Florida Laboratory for allowing us the use of the facility, and for being so accommodating to us over this past week. Additionally, as this concludes the fourth offering of the competition, the CSDCMS would also like to thank the many sponsors, judges, and companies which have all contributed to make the CSDC a success. Please see this article on our web page for more photos of the testing campaign.

And, stay tuned for Selfie-Sat in CSDC-5, which will begin in September.

About the CSDCMS:
The Canadian Satellite Design Challenge Management Society is a federally-incorporated not-for-profit organisation co-registered in British Columbia and headquartered in Vancouver. It is managed and operated by a volunteer Board of Directors. For more information on the Canadian Satellite Design Challenge or the CSDCMS, please visit our website at www.csdcms.ca, or contact:

Larry Reeves
CSDCMS President
LReeves (at) CSDCMS.ca
Ph: +1 778-988-6343

[ANS thanks the CSDCMS for the above information]

AMSAT Field Day submissions are due Monday, July 9

A quick reminder. AMSAT Field Day submissions are due Monday, July 9, 2018 by 11:59 PM Central Time. This is earlier than the ARRL due date. You will get a reply email that your submission was received.

email submissions to:
kk5do (at) amsat.org or kk5do (at) arrl.net.

The Satellite Summary Sheet should be used for submission of the AMSAT Field Day competition and be received by KK5DO by 11:59 P.M. CDT, Monday, July 9, 2018.

Complete rules and criteria can be found at:
https://www.amsat.org/field-day/

[ANS thanks Bruce KK5DO for the above information]

ISS SSTV Transmissions Continue

SSTV transmissions from the Russian Service module on the International Space Station started June 29 on 145.800 MHz FM and they are still continuing

There may well be further transmissions up until July 13 when the equipment being used for the SSTV will be required for a school contact.

David Boult G7HCE in Exeter noted that some adjustments have been made by the cosmonauts and the images are now being sent uncropped. For the first week the edges of the pictures were missing.

The images commemorate the various satellites that were hand-deployed from the ISS. These will include the first satellite deployment from ISS: Suitsat-1/Radioskaf-1 which was developed by ARISS and deployed in February 2006.

The transmissions are being made on 145.800 MHz FM using the PD-120 SSTV mode.

Note the ISS transmissions use the 5 kHz deviation FM standard rather than the narrow 2.5 kHz used in Europe. If your transceiver has selectable FM filters try using the wider filter. Handheld transceivers generally have a single wide filter fitted as standard and you should get good results outdoors using just a 1/4 wave whip antenna.

The ISS Fan Club site will show you when the space station is in range http://www.issfanclub.com/

ISS SSTV information and links at
https://amsat-uk.org/beginners/iss-sstv/

[ANS thanks Southgate ARN for the above information]

ARISS News

Recent Successful ARISS Contacts

+ 2018-06-27 10:32 UTC between Alexander Gerst KF5ONO using callsign DPØISS and Werner-Heisenberg-Gymnasium, Leverkusen, Germany. Contact was direct via DLØIL. ARISS Mentor was Peter IN3GHZ.

+ 2018-06-27 10:32 UTC between ASTRONAUT Alexander Gerst KF5ONO, using callsign DPØISS, and Schickhardt-Gymnasium, Herrenberg, Germany, contact was direct via DLØSGH ARISS Mentor was Peter IN3GHZ.

+ 2018-07-02 15:35 UTC between Serena Aunon-Chancellor KG5TMT, using ISS callsign NA1SS and Pearl Technology STEM Academy, Peoria Heights, IL, contact direct via W9DWJ. ARISS Mentor was Dave AA4KN.

+ 2018-07-03 08:32 UTC bewtween Alexander Gerst KF5ONO, using ISS callsign DPØISS and Kardinal-Frings-Gymnasium, Bonn, Germany, contact was direct via DLØIL. ARISS Mentor was Peter IN3GHZ.

Upcoming ARISS Contact Schedule

Space Port Area Conference for Educators (SPACE), Kennedy Space Center, FL (CASIS#4). Contact is telebridge via W6SRJ.
The ISS callsign is yet to be determined.
The scheduled astronaut is Ricky Arnold KE5DAU.
Contact is a go for: Fri 2018-07-13 14:00:22 UTC.

[ANS thanks ARISS, Charlie AJ9N and David AA4KN for the above information]

Satellite Shorts From All Over

+ 6U CubeSat Design Specification Rev 1.0 - Released
  The 6U CubeSat Design Standard has now been fully reviewed and is available for download as Revision 1.0. Please visit cubesat.org to view and download the 6U CDS.

  [ANS thanks The CubeSat Team at Cal Poly, SLO for the above information]

+ Interview about ISS SSTV on local TV station
  James M0JFP of the Chertsey Radio Club was interviewed by That's Surrey TV, about the recent Slow Scan TV transmissions from the International Space Station

  The images transmitted commemorated the various satellites that had been hand-deployed from the ISS.

  Watch the video at
  https://tinyurl.com/ANS189-SurreyTV

  ISS SSTV
  https://amsat-uk.org/2018/06/27/receive-sstv-from-space/

  That's TV Surrey
  http://www.thats.tv/surrey/
  https://twitter.com/ThatsSurreyTV

  [ANS thanks Southgate ARN for the above information]

+ Software for STEM high altitude balloon flight projects is posted
  in the article at:
  https://www.raspberrypi.org/blog/pytrack-skygate-hab-software/

  [ANS thanks AMSAT-UK via twitter for the above information.]

+ CalPoly 2018 Cubesat Developers Workshop Presentations Available

  2018 PRESENTATIONS ARE NOW AVAILABLE TO VIEW!

  YouTube Channel:
  https://www.youtube.com/channel/UCENz0fNHsDR8Kz3jM6C_VWw

  PDF Presentations:
  http://mstl.atl.calpoly.edu/~workshop/archive/2018/

  [ANS thanks cubesat.org for the above information]

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
EMike McCardel, AA8EM
aa8em at amsat dot org